THE DIPTERAN FAUNA OF BERMUDA.

By Charles W. Johnson.

Since publishing a list of the Diptera of Bermuda in 1904, (Psyche, vol. XI, pp. 76-80), I have received a number of specimens from Professor Trevor Kincaid, collected in the summer of 1905, and from Mr. Frank Morton Jones, collected December, 1908-May, 1909, and Dr. Reynold A. Spaeth, collected in the summer of 1910. The material thus obtained at various seasons of the year together with the notes kindly furnished by Mr. Jones, greatly increase our knowledge of the Diptera of the Islands. The study of this material has brought out many interesting points in distribution, some of the species derived from the mainland having become either slightly or decidedly differentiated.

The previous list contained about fifty species. Little of the data has been repeated, although all of the species are included in the following list, which contains about ninety-five species.

Tipulidae.

Tipula costalis Say. "This fly was abundant at Paget Marsh in February and March, but seemed to completely disappear later." (F. M. Jones).

Dicranomyia liberta Osten Sacken. July 7, at light, (Kincaid), Feb. 14 (F. M. Jones).

Gonomyia (Leiponeura) pleuralis Will. This seems to be the most common Tipulid and the one previously recorded as *Dicranomyia distans*, Osten Sacken. It was taken by Professor Kincaid, July 5 and 20, and by Mr. F. M. Jones, Feb. 19 and May 6 and 8.

Limnophila insularis sp. nov. Fig. 2.

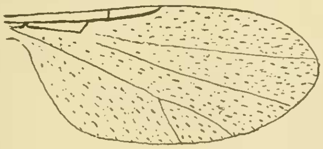

Fig. 1

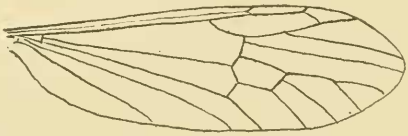

Fig. 2.

This species has a general resemblance to *L. recondita* Osten Sacken. The antennæ in both sexes are of equal length, light yellow, flagellum dark brown, the verticilli much shorter than in *L. recondita.* Head blackish, covered with a greyish bloom. Thorax shining brown, pleura dull yellow with a greyish bloom. Abdomen dark brown, genitalia yellow. Halteres yellow, knob somewhat infuscated. Legs yellowish, tarsi brownish toward the ends. The wings are noticeably shorter and broader toward the base than in *L. recondita*, the præfurca is shorter and the marginal cross vein at the middle of the anterior branch of the second vein is close to the tip of the first longitudinal vein. Length, ♂ 6mm. ♀ 7mm.

Two specimens. ♂, March 10, ♀, May 1, 1909, (F. M. Jones).

PSYCHODIDAE.

Psychoda alternata Say. Nine specimens were received from Mr. Jones. These were collected by Mr. Mowbray, May 15.

Psychoda sp. A larger species was collected by Prof. Kincaid and retained by him for study.

CHIRONOMIDAE

Chironomus cristatus Fabricius. July 26 (Kincaid); Paget Marsh, March 10, (F. M. Jones); near Hamilton, June 26 (Spaeth).

Orthocladius sp. July 15 (Kincaid).

Metriocnemus knabi Coquillett. Eight specimens, February 1 (F. M. Jones).

Ceratopogon fur sp. nov. Fig. 1.

Female: Head black, proboscis brown, palpi black, antennæ black, covered with a thick grayish pubescence, apparently with fourteen joints. Thorax black, subshining, hairs grayish, scutellum dark brown, abdomen dull black, thickly covered with grayish hairs. Legs brown, tip of the tarsi and claws black, posterior metatarsi as long as the following joints. Halteres black, the stalks short and thick, the knobs proportionately large. Wings smoky, strongly pubescent, venation as shown in the figure, the third and fourth longitudinal veins obsolete toward the basal portion of the wing. Length, 1mm.

Two species, Warwick Marshes, April 16 (F. M. Jones).

The two specimens were attached to a small dragon fly, (an Agrionid), with the mouth parts extended into the sutures near the base of the wings apparently in the act of biting. This is the second time that the writer has seen a *Ceratopogon* attached to an insect. The first example was also taken by Mr. Jones, the flies being attached to the wings of a *Chrysopa*. This specimen was loaned to Dr. E. P. Felt in connection with his studies of the Cecidomyiidæ, as a species of the latter family has been recorded by Mrs. Annie T. Slosson as also attaching itself to the wings of a *Chrysopa*. (Ent. News, VII, 238, 1896).

Ceratopogon sp. July 12 and 29 (Kincaid).

CULICIDAE.

Stegomyia calopus Meigen, (*Stegomyia fasciatus* Fabr.) The "yellow fever mosquito," June 25-29 (Kincaid); Jan. 22 and Feb. 18, May 6, and 10, 1909 (F. M. Jones).

Aedes sollicitans Walker, (*Culex sollicitans* Walk.). The salt marsh mosquito, July 6-12 (Kincaid); Walsingham, Feb. 16, Apr. 8 (F. M. Jones).

Aedes taeniorhynchus Wiedemann. (*Culex taeniorhynchus* Wied.). July 7-23 (Kincaid).

Culex quinquefasciatus Say, (*C. fatigans* of Theobald not Wiedemann; *C. cubensis* Bigot). Record by Theobald from collections made by Dr. Eldon Harvey, July 1899.

MYCETOPHILIDAE.

Sciara sp. June 25 (Kincaid).

CECIDOMYIDAE.

Cecidomyia sp. June 25 (Kincaid).

Cecidomyia sp. June 25 (Kincaid).

BIBIONIDAE.

Dilophus breviceps Loew. Warwick Swamp, April 16, (♂ ♀). "In sweep net, in great numbers on one occasion only." (F. M. Jones).

Scatopse pygmaea Loew. June 28 and 30 (Kincaid).

Scatopse atrata Say. Recorded by Prof. Verrill.

STRATIOMYIDAE.

Hermetia illucens Linne. July 1 (Kincaid); May 13 (F. M. Jones).

Odontomyia bermudensis sp. nov.

Female: This species is closely related to *O. cincta* Oliv. and might be considered by some only a variety, but the apparent constancy of the seven specimens before me seems to warrant their separation. The two principal characters which readily distinguish this species are the conspicuous black stripes extending from the humeri to the base of the wings, dividing the green lateral stripes of the thorax from the green pleura, and the dark brown color of the larger vein, this color also extending over the costal and marginal cells and the base of the wing. Minor characters are the greater amount of black on the head, the black of the vertex being often connected with the large black orbital spots of the front, from which extend narrow curved lines to the frontal suture, and a narrow frontal stripe, which is also often present. The black markings of the abdomen are much larger, covering fully two thirds of the surface, while in *O. cincta* the black rarely exceeds one half. Six of the specimens have a dark yellow scutellum, but this may be a discoloration, as it occasionally appears in *O. cincta.* Length 10 to 12mm.

Six specimens, May 9 and 11 (Jones); one specimen, July 26 (Kincaid). "Not rare on the flowers of wild carrot, especially along the borders of the Warwick Marshes" (F. M. Jones).

TABANIDAE.

Tabanus atlanticus sp. nov.

Female: Face white with white hairs, above the base of the antennæ slightly yellowish; front with grayish pollen and brown hairs, callosity large, shining black, with a short, slightly roughened line extending upwards; palpi light yellow with black hairs, proboscis brown; antennæ yellow, with tufts of black hairs on the upper and of white hairs on the under sides of the first and second joints, third joint not angulate, annuli brown. Thorax gray with four obscure brown stripes, hairs whitish; pleura mottled with bluish-black and covered with whitish pollen and hairs; scutellum grayish. Abdomen brown with a lighter posterior margin on each segment, the entire surface with a white pubescence. Legs yellow, under side of the posterior femora and tips of all the tibiæ and tarsi brown, front coxae with long, white hairs; halteres light yellow. Wings hyaline, stigma and cross-veins clouded with brown. Length, 13mm.

The ♂ differs but little from the ♀, except that the facets on the upper two-thirds of the eye are double the size of those on the lower third. The stripes on the thorax are obsolete. Length 10mm.

Three specimens collected by Professor Kincaid, July 10 and 30.

Tabanus nigrovittatus Macquart.

In writing to Mr. Jones regarding a larger horse-fly than this species, he says: "This is undoubtedly the 'large horse-fly' you asked me to look out for; the carriage-drivers assured me that no larger species occurs here. It is said to be locally abundant in the summer time, but up to May 20 I saw only one living example; the other specimen I got from a local collector who confirmed the drivers' statement." It seems, therefore, probable that the reference to a larger species, (Psyche vol. XI, p. 77) applies also to this species.

SCENOPINIDAE.

Scenopinus nubilipes Say. One specimen, May 15 (F. M. Jones).

ASILIDAE.

Asilus? sp. Recorded by Professor Verrill.

DOLICHOPODIDAE.

Sciapus chrysoprasius Walker. Not rare, March 20, 30 and May 12 (F. M. Jones).

Sciapus pallens Wiedemann. Three specimens, April 17, May 18 and 19, resting on the white walls. (F. M. Jones).

Diaphorus contiguus Aldrich. Seven specimens, June 30 to July 26 (Kincaid).

Chrysotus picticornis Loew. Three specimens July 15 (Kincaid). Common. Spanish Point, July 5 (Spaeth).

Chrysotus bermudensis sp. nov.

Front shining green, face with silvery white pollen; antennæ black, small. Thorax and scutellum shining green, slightly covered with a yellowish pollen; pleura greenish black, with whitish pollen.. Abdomen shining with a narrow bronze band at the base of each segment. Legs including the front coxæ yellow, middle and posterior coxæ black; a preapical band on the posterior femora, and the extreme tips of the tarsi dark brown. Halteres, tegulæ and cilia light yellow, wings grayish hyaline. Length, 2mm.

Three females, June 20, July 26 (Kincaid). Holotype in the author's collection; one paratype in the Museum of Comparative Zoology. This species is closely related to *C. pallipes* Loew, but seems readily separated from that species by the dark preapical band on the posterior femora.

PIPUNCULIDAE.

Pipunculus insularis Cresson, (Trans. Amer. Ent. Soc., vol. 36, p. 317, 1911). Hamilton parish, May (S. Brown); July 29 (Kincaid); Agars Island, June 18, and Spanish Point, July 5 (Spaeth).

Pipunculus albiseta Cresson, (Trans. Amer. Ent. Soc., vol. 36, p. 318, 1911). Hamilton Parish, May. (S. Brown); Jan. 27 (F. M. Jones).

Allograpta obliqua Say. "Abundant throughout the winter," Dec. 11 to Jan. 25 (F. M. Jones); Agar's Island, June 18 (Spaeth).

Toxomerus marginatus Say. (*Mesogramma marginatum* Say, of the previous list). "Very abundant and present throughout the winter and spring (Dec. 8 to May 3). A specimen was bred April 1, from a larva found in the flowers of the Bermuda blue-eyed grass." (F. M. Jones). On the road from Hamilton to Grasmere (Spaeth). The larvae are aphidivorous.

Eristalis tenax Linne. "The first specimen was taken February 18; afterwards not rare on flowers, but never abundant." (F. M. Jones).

Eristalis æneus Scopoli. (*Lathyrophthalmus æneus* Scop.). "Most abundant on flowers along the cliffs of the south shore, where it was present throughout the winter" (F. M. Jones). Specimens bear the following dates: December 14, 24; January 19; February 6 and March 4.

SARCOPHAGIDAE.

Sarcophaga georgina Wiedemann? Both Professors Walker and Verrill referred the large flesh fly of the Island to *S. carnaria* Linne. Among the series collected by Messrs. Davis, Kincaid and Jones there is not a specimen referable to that species. They represent the large species with reddish genitalia which I have referred doubtfully to *S. georgina.*

Sarcophaga assidua Walker. Numerous specimens agree with the description of this species. Feb. 24, April 16 and May 5 (F. M. Jones); Spanish point, July 5 (Spaeth); July 6 (Kincaid).

Sarcophaga sp? Probably two closely related species. The present unsatisfactory condition of our Sarcophagidae precludes the possibility of accurately determining the species.

Helicobia helicis Townsend. Common, April 18 and 26 (F. M. Jones). Spanish Point, July 5 (Spaeth).

Sarcophagula sp. Recorded by Dr. Dahl. I was in hopes of finding the common *S. imbecilla* v. d. W. of the West Indies among the material studied.

MUSCIDAE.

Musca domestica Linne. The common house-fly is abundant throughout the year. June 20 (F. M. Jones); Agar's Island, June 18, and Spanish Point, July (Spaeth).

Stomoxys calcitrans Linne. The biting house fly or cattle fly. Abundant with the common house-fly, June 20 (F. M. Jones); Agar's Island, June 18 (Spaeth); July 11 (Kincaid).

Synthesiomyia brasiliana B. & B. July 29 (Kincaid).

Calliphora vomitoria Linne. Recorded by Prof. Verrill.

Lucilia sericata Meigen. Abundant. Dec. 25 to May 12 (F. M. Jones); July 12-29 (Kincaid); Spanish Point, July 5 (Spaeth). *L. latifrons* Schiner is a synonym.

Lucilia caesar Linne. Recorded by Prof. Verrill.

Lucilia problematica sp. nov.

Male: Front linear as in *L. caesar*, black, orbits whitish pollinose; face black, whitish pollinose, the oral margins and antennæ reddish brown, arista black. Thorax and abdomen bronze black shining, with a slight whitish pollen especially on the sides and on the pleura. Two post-acrosticals. Femora and tibiæ brown and the tarsi blackish. Squamæ and halteres yellow, wings brownish hyaline. Length 7mm.

Female: Similar to the male, front, as in *L. caesar*, one-third the width of the head.

Holotype June 30 (Kincaid); allotype March 1899 (Montgomery), in the author's collection. This interesting species has been in my collection for some time awaiting more material. The first specimen (♀, antennæ wanting) was collected by Mr. Thomas L. Montgomery in March, 1897. A teneral specimen (♂) was taken by the late C. Abbott Davis, July 11, 1903. These were submitted to the late D. W. Coquillett at the time I was preparing my previous list, but he declined to name them without more material. The third specimen (♂) was taken by Prof. Kincaid, June 30, 1905, and a fourth specimen (♀ teneral) by Mr. Frank M. Jones, March 1, 1909. It is close to L. caesar in every respect but color; the entire absence of green or blue, however, seems to preclude placing it in that species. I had hoped that a larger series would show variations approaching that species, but while *L. caesar* was mentioned by Prof. A. E. Verrill, the large series of *Lucilia* brought from the Islands by Messrs. Montgomery, Davis, Kincaid and Spaeth, contained only *L. sericata.*

ANTHOMYIDAE.

Ophyra aenescens Wiedemann. July 6 (Kincaid); December 26 (F. M. Jones).

Fannia pusio Wied. (*F. femorata* Loew) May 9 (F. M. Jones); July 6 (Kincaid).

Fannia polychæta Stein. This is based on *Anthomyia lepida* Meig., recorded by J. Matthew Jones in 1876. It is a doubtful species, referred with a question to this species.

Limnophora narona Walker. (*L. cyrtoneurina* Stein) collected by C. A. Davis, July 14.

Mydæa sp? One imperfect specimen, July 17 (Davis).

Phyllogaster cordyluroides Stein. June 30 and July 12 (Kincaid).

Phorbia fusciceps Zetterstedt. Common, December 26 (F. M. Jones); June 30 and July 29 (Kincaid); Agar's Island, June 18; on the road from Hamilton to Grasmere, June 26; Spanish Point, July 5 (Spaeth). This species infests onions and other vegetables, and is undoubtedly the fly referred to by Verrill as "*Anthomyia ceparum*," "onion fly."

Coenosia sp? July 6 (Kincaid).

Lispa albitarsis Stein? Spanish Point, July 5 (Spaeth). A female agrees with this species except that the palpi are blackish.

Fucillia marina Macquart (*F. fucorum* of authors, not Fallen). In great number on piles of sea-weed, March 6 (F. M. Jones).

SCATOPHAGIDAE.

Scatophaga sp? Recorded.

BORBORIDÆ.

Leptocera fontinalis Fallen, (*Limosina fontinalis*). July 2 (Kincaid).

Leptocera venalicia Osten Sacken. May 3 (F. M. Jones). Supposed to have been introduced into Cuba by the slave trade.

Leptocera illota Williston. Spanish Point, July 5 (Spaeth).

Leptocera sp. Three specimens of a smaller species from a pile of sea-weed, Febuary 4 and March 6 (F. M. Jones). The specimens are imperfect.

Borborus minutus sp. nov.

Male: Front covered with light brownish pollen, two dark brown stripes extending upward from the base of the antennæ and over the vertex, the stripes bearing a narrow whitish line above the antennæ, face brown, cheeks whitish pollinose, antennæ black. Thorax light brownish pollinose with three dark brown stripes, the middle one double the width of the others, scutellum light brown, the disc and apex slightly darker, pleura brownish pollinose. Abdomen dull grayish black. Legs black, the posterior metatarsis about double the width of the following joint. Halteres yellow. Wings grayish hyaline, veins dark brown. Length 2mm.

Holotype, Spanish Point, July 5 (Spaeth), in the author's collection. Two paratypes, Horse Neck Beach, Mass., July 8, 1896, in the collection of the Boston Society of Natural History. The latter were collected by Dr. Garry de N. Hough, and were in my collection for a number of years. I have adopted a manuscript name proposed by Dr. Hough.

SCIOMYZIDÆ.

Tetanocera kincaidi sp. nov.

Male: Face and inferior orbits white, with a brown stripe on the cheek extending from the eye to the oral margin; front yellow, the frontal vitta and a transverse stripe extending from the base of the antennæ to the orbits brown, frontal orbits narrow, white; antennæ yellow, the bristles and hairs on the second joint and the arista black. Thorax yellow, with two narrow dorsal lines and broad lateral stripes of brown; pleura light yellow with a broad brown stripe; scutellum yellow with four black marginal bristles. Abdomen brown, lateral margins and the genitalia yellow. Halteres light yellow. Legs yellow, a spot on the under side of the middle and posterior femora somewhat beyond the middle, tips of the tibiæ and the tarsi blackish, due in part to the blackish hairs, middle coxæ with a tuft of black bristles below, front of the anterior coxæ bearing three bristles. Wings similar to *T. spinicornis* Loew, but proportionately broader and the reticulations less profuse, with five unequally arranged square hyaline spots in the marginal cell beyond the end of the first vein. Length, 5mm.

Female: Similar to the male, but with an obsolete dorsal line on the abdomen. Length 6mm.

Ten Specimens. Holotype, July 29, allotype June 26, 1905 (Kincaid) and three paratypes, May 30 (Mowbray); January 12 and February 5 (F. M. Jones) in the author's collection. Paratypes also in the Museum of Comparative Zoology, and in the Collections American Entomological Society.

With only two poor specimens before me this was referred to *T. spinicornis* in my previous list. It closely resembles that species but can be readily separated by the wings as described above, the single, not double spots on the under side of the posterior femora and the larger and less acute third joint of the antennæ. It is also slightly larger.

The species also resembles *T. setosa* Coq. but the spots on the under side of the posterior femora and the five unequally arranged hyaline spots in the marginal cell beyond the end of the first longitudinal vein distinguish it from that species.

Tetanocera (Dictya) umbrarum Linné (*T. pictipes* Loew, Monog. N. Amer. Diptera, I, 111, 1862). Two specimens, March 20 (F. M. Jones); July 15 (Kincaid).

SAPROMYZIDÆ.

Sapromyza saroria Williston. July 6 and 11 (Kincaid); Jan 6, April 10 and May 4 "On the under side of palmetto leaves in a swamp." (F. M. Jones).

ORTALIDÆ.

Euxesta abdominalis Loew. June 30 (Kincaid). Sweep net, Warwick Marshes, December 11, also March 5 (F. M. Jones).

Euxesta annonae Fabricius. June 26 (Kincaid).

Euxesta pusio Loew. June 26 (Kincaid).

Chaetopis fulvifrons Macquart (*Urophora fulvifrons* Macq. Dipt. Exot., Suppl. V, 125, pl. VII, fig. 8, 1855). July 29 and 30 (Kincaid); March 20 (F. M. Jones). This is probably the same as the *C. aenea* of my previous list, as recorded by J. Matthew Jones in 1876. It differs from the true *C. aenea* in lacking the frontal cross-bristles and in having only three or four frontal orbital bristles.

Chætopsis debilis Loew. Spanish Point, July 5 (Spaeth). This may prove to be only a variety of *C. fulvifrons* Macq. as the color of the basal segments of the abdomen and the bands on the wings, are both apparently variable characters.

Ceratitis capitata Wied. "Fruit fly."

This fly which was introduced sometime prior to 1870 is still on the Islands but in very limited numbers owing to the vigorous campaign that has been waged against it. The authorities deserved great credit for their perseverance in endeavoring to exterminate this insect and we hope that in the near future they may again be able to resume the raising of the various fruits affected. There is little doubt that this vigorous action has for many years checked the western movement of this great fruit pest.

Having written to Mr. F. M. Jones in May, 1909, to ascertain if the fruit fly was still on the Islands, he replied: "In regard to the fruit fly (*Ceratites*); several years ago a regular crusade against this insect was undertaken and is being continued. All of the Surinam cherry trees were cut down, also most of the sweet orange trees and peach trees. Inspectors were appointed in each parish and authorized to visit every tree and strip off the unripe fruit,—oranges, lemons, sapadillas, loquats, sugar-apples, etc.; pawpaws were ordered to be gathered before turning yellow, under the penalty of having the trees chopped down. All this was in an effort to entirely exterminate the insect, it has undoubtedly greatly reduced its numbers for I failed to find a specimen, though I searched all kind of fruits where I could find any which had escaped inspectors. I heard of the fly as still present this spring. The crusade has not the support of the people and trees are concealed from the inspectors when possible, so that probably when the vigilance is relaxed the insect will appear again. There are several wild fruits which should be examined as possible breeding places. Sorry I could not get you some specimens."

Expressing to my friend Dr. R. A. Spaeth a desire to obtain some specimens of the "fruit fly" he spoke to Col. W. R. Winter who bred some specimens which I received though the kindness of Professor E. L. Mark. The letter accompanying the specimens contains so much of interest pertaining to the habits of the fly that I have taken the liberty of publishing it in part.

"With reference to the experiments, several punctured peaches placed in isolation cages, developed flies in from seven to ten days from the time in which the larvæ entered the soil, as I had not the actual date of the depositing of the eggs, I did not trouble to keep an exact record beyond noting the dates of the larvæ leaving the fruit and the appearance of the fly."

"Two peaches in perfect condition were left on an exposed branch of the tree and watched, but owing to the scarcity of flies it was not until 4 P. M. on the 13th of July that a fly appeared and punctured one of them; after ten minutes I killed the fly. The peach was carefully examined and one puncture only was found. On the 17th the fruit was found to be soft around the puncture and was gathered. It was placed in a gauze covered glass jar on two and a half inches of clear, dry sand. On the 24th at 10 A. M. the maggots were observed going into the sand, many of them being visible through the sides of the glass, they having gone down between the sand and the glass. On the 27th the peach was removed and examined. Two dead maggots were found in it. The pupæ were carefully separated from the sand and twelve more were found, these were placed in dry soil in an isolation cage made especially for this experiment. The flies appeared as follows: two on the 1st of August at 7 and 10 A. M. Three on the 2nd, before 4 P. M. Two on the 3rd, before 7 P. M., and on the 4th, before 9 A. M. Carried no further as all flies fed on arsenate of lead which was placed in the cage and were found dead on the 5th at 7 A. M. Weather very hot and dry, no rain, temperature averaging 82°.

Aciura insecta Loew. June 26 (Kincaid); Spanish Point, July 5th (Spaeth).

Ensina picciola Bigot, (*Trypeta humilis* Loew). Abundant in sweep-net, December 8 and 29 and May 17 (F. M. Jones). Road from Hamilton to Grasmere June 26 and Spanish Point July 5 (Spaeth).

SEPSIDÆ.

Sepsis violacea Meigen. "Common January 21 and April 29 (F. M. Jones); June 30 and July 29 (Kincaid); Spanish Point, July 5 (Spaeth).

Piophila casei Linné. The cheese fly. Recorded by Prof. Verrill.

EPHYDRIDÆ.

Mosillus nana Walker? (*Ephydra nana* Walker, Trans. Ent. Soc., London, N. Ser. IV, 234, 1857). July 30 (Kincaid); Spanish Point, July 5 (Spaeth).

Ephydra austrina Coquillett. One specimen collected by C. A. Davis.

OSCINIDÆ.

Hippelates plebeius Loew. June 28 and 30 (Kincaid); Agar's Island, June 18 (Spaeth).

Hippelates pusio Loew. July 12 (Kincaid).

Oscinis coxendix Fitch. Common. June 30 and July 12-18 (Kincaid); February 4 (F. M. Jones); near Hamilton, June 26 and Spanish Point, July 5 (Spaeth).

Oscinis trigramma Loew. July 11, 15 and 26 (Kincaid).

Oscinis umbrosa Loew. Common, June 25 to July 29 (Kincaid).

DROSOPHILIDÆ.

Drosophila adusta Loew. July 25, 29 (Kincaid); February 4 (F. M. Jones).

Drosophila ampelophila Loew. January 7 (F. M. Jones).

Drosophila repleta Wollaston, (*D. punctulata* Loew, Berl. Ent. Zeits., VI, 232, 1862; *D. adspersa* Mik, Wien. Ent. Zeitzg. V. 328, 1886.) January 1 and May 6 (F. M. Jones).

Paratissa pollinosa Williston, July 10 (Kincaid); December 24 and March 6, on sea-weed (F. M. Jones).

AGROMYZIDÆ.

Phytomyza sp. January 27, February 24 (F. M. Jones).

Agromyza æneiventris Fallen. July 1 (Kincaid).

Agromyza pusilla Meigen. July 5 (Kincaid).

Agromyza maculosa Malloch. May 17 (F. M. Jones).

Desmometopa m-nigrum Zetterstedt, May 9 (F. M. Jones).

Milichiella lacteipennis Loew, (*Ophthalmomyia lacteipennis*). July 6, 12 and 28 (Kincaid); Spanish Point, July 5 (Spaeth).

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